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Southern Pinghua: phonology and phonological diversity

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Introduction: Linguistic background of Southern Pinghua

- Geographical distributions of Southern Pinghua dialects and ethnicity composition of native Southern Pinghua speakers
 - Southern Pinghua are mostly spoken in Southern Guangxi Zhuang Autonomous Region in the far south of China (Qin 2000: 2)
 - There are approximately two million native speakers with the majority identifying themselves as ethnic Han, and most of the rest as ethnic Zhuang (Min 2013: 22)



Figure 2 Geographical location of Guangxi Map © 2017 Google

Introduction: Linguistic background of Southern Pinghua

- Linguistic affiliation
 - Southern Pinghua is a first-order branch of Pinghua, which is in turn a first-order branch of Sinitic
- Internal branching
 - The proposal by Yu (2007) divides Southern Pinghua into three clusters, primarily based on the geographical distributions of Southern Pinghua dialects, rather than distinctive phonological developments of those dialects

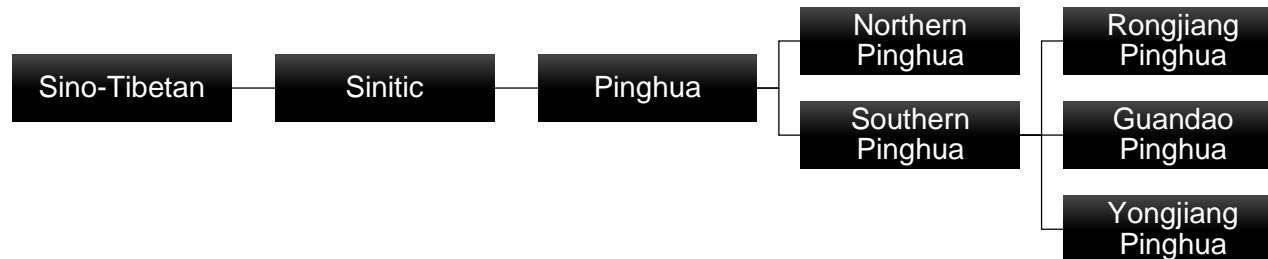


Figure 1 language affiliation of Southern Pinghua based on Matisoff (1991), Wurm and Li (1987), and Yu (2007)

Introduction: literature review

- Phonological surveys of Southern Pinghua dialects
 - Two Southern Pinghua dialects have been studied in the English language literature
 - The Shangyao dialect (see de Sousa (2015))
 - The Wucun dialect (see Cao (2018))
 - In the Chinese language literature
 - The phonologies of thirty-two Southern Pinghua dialects have been surveyed and published by Chinese linguists, following the practices of Chinese traditional phonology (see L. Li and Zhu (2009), L. Li (2000), Qin (2000), Qin (2017), Zhang (1987), Xie (2007), Luo (2014), Liu (2011), S. Li (2006), Ruonan Li (2013), Huang (2008), Chen and Liu (2009), Gao (2012), M. Liang and Zhang (1996), Zhou, Shen, and Li (2009)).

Introduction: literature review

- Previous comparative studies

Whereas some studies, such as Qin (1993) and M. Liang and Zhang (1996), briefly mentioned some phonological differences between Southern Pinghua dialects, no published studies seem to have been devoted to comparing the phonology of Southern Pinghua dialects and reconciling dialectal variances between those dialects

Introduction: literature review

- Views on the phonological diversity in Southern Pinghua and mutual intelligibility between Southern Pinghua dialects
 - Although there appears no dedicated comparative study of the phonologies of Southern Pinghua dialects, the common view among scholars is that Southern Pinghua dialects are highly consistent in their distinctive phonological features and mutually intelligible to one another. Dialects spoken in and around the city of Nanning are usually considered prototypical of Southern Pinghua (see Qing (2000), Li (2000), and de Sousa (2015)).
 - In the English language literature, Southern Pinghua dialects are described as 'accents' to one another (de Sousa 2015). The Shangyao dialect as spoken in the outer suburbs of the city of Nanning is described as Nanning Pinghua (see de Sousa 2015) and represents Southern Pinghua in various studies (see de Sousa (2015a) and de Sousa (2017))
 - However, many speakers of the Wucun dialect as spoken in the inner suburbs of the city of Nanning reported that the Wucun dialect and the Shangyao dialect are significantly different to one another, and speakers don't effortlessly understand each other when the conversations are at normal speech tempo.

Introduction: objectives of the current study

- To fill in the gaps in the current literature, this study is set out to
 - describe the phonology of the Wucun dialect of Southern Pinghua as spoken in the inner suburb of the city of Nanning
 - compare the phonologies of those Southern Pinghua dialects that have been surveyed thus far and reconcile dialectal variances
 - Explore whether Southern Pinghua dialects are merely ‘accents’ to each other with minimal phonetic or phonological differences, or they are appreciably diverse in their phonologies and hence need to be considered respectively in future studies

Southern Pinghua phonology and dialectal variances - Consonants

	Bilabial		Labiodental		Alveolar		Palatal		Velar		Labial-velar		Glottal	
Oral stop	P ^h	p			t ^h	t			k ^h	k				
Nasal		m				n		ɲ		ŋ				
Fricative			f		s								h	
Affricate					tʰs	ts								
Lateral fricative					ɬ									
Approximant								j				w		
Lateral approximant					l									

Figure 3 Consonant inventory of the Wucun dialect

- Nineteen consonants are respectively articulated in seven manners of articulation at seven places of articulation
- The three pairs of homorganic oral stops contrast with one another in the presence or absence of aspiration.
- There are no voiced oral stops

Southern Pinghua phonology and dialectal variances - Consonants

- The three unaspirated oral stops and all nasals can occur in the initial position or the final position of a syllable. When occurring in the final position of a syllable, the three unaspirated oral stops are never released
- Both glides can appear in the initial, the medial, or the final position of a syllable. However, the occurrence of the medial glides are highly restricted due to phonotactics. The labial-velar glide /w/ can follow only the two velar stops (/k^h/ and /k/), such as in /k^hwa52/ ('praise') and /kwa52/ ('melon'). On the other hand, the palatal glide /j/ can precede only the rhymes /ak/ or /aŋ/, such as in /kjak33/ ('foot') and /kjaŋ52/ ('ginger')
- Except the combinations of an initial consonant and a medial glide, no presence of onset consonant cluster
- Consonants other than unaspirated oral stops, nasals, and glides can occur only in the initial position of a syllable
- Beside the Wucun dialect, of the thirty-three dialects that have been surveyed, eleven dialects (approximately 30%) have the similar consonant inventory as presented in figure 3 above.

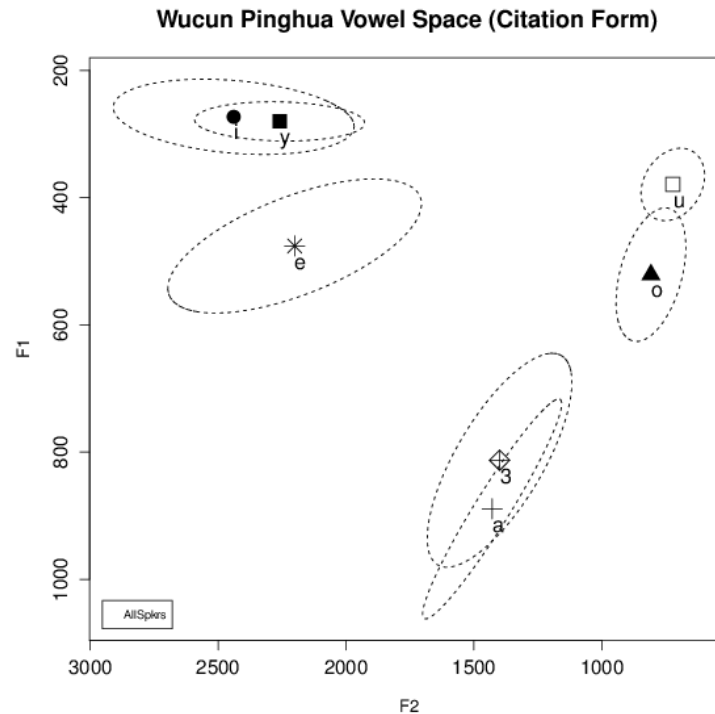
Southern Pinghua phonology and dialectal variances - Consonants

	Bilabial		Labiodental		Alveolar		Post alveolar		Palatal		Velar &labial-velar		Glottal	
Stop	P ^h	p			t ^h	t					k ^h ;k ^{hw}	k;k ^w		
Nasal		m				n				ɲ		ŋ		
Fricative			f				ʃ						h	
Affricate							tʃ	tʃ						
Lateral fricative				ɬ										
Approximant										j		w		
Lateral approximant					l									

Figure 4 Consonant inventory of the Shangyao dialect (adapted from de Sousa (2011))

- The consonant inventories of twenty-two (approximately 70%) of the thirty-four dialects that have been surveyed are similar to that of the Shangyao dialect as shown in Figure 4 above
- Two major differences between the consonant inventories of the Shangyao dialect and the Wucun dialect are
 - For the fricative and affricates, the Wucun dialect has them articulated at the alveolar position, whereas the Shangyao dialect at the post alveolar position. Nevertheless, both dialects have only one set of fricative and affricates
 - In the Shangyao dialect, the palatal glide /j/ cannot occur in the medial position of a syllable. On the other hand, when occurring in the medial position, the labial-velar glide /w/ can follow only the two velar stops (/k/ and /k^h/), which is similar to the Wucun dialect. Thus, the medial labial-velar glide /w/ in this group of dialects is commonly analyzed as co-articulatory gesture to the two velar stops, so /k^w/ and /k^{hw}/ are typically added to the consonant inventory

Southern Pinghua phonology and dialectal variances – vowels and rhymes



• Figure 5 Vowel inventory of the Wucun dialect

- The Wucun dialect has a seven-vowel system with three front vowels, two central vowels, and two back vowels.
- Besides the Wucun dialect, the vowel systems of eleven (approximately 30%) Southern Pinghua dialects are similar to the one as shown in Figure 5 above.

Southern Pinghua phonology and dialectal variances – vowels

/i/		/u/
	/ə/	
/ɛ/		/ɔ/
	/e/	/a/

Figure 6 vowel system of Shangyao Pinghua, based on de Sousa (2011)

- In comparison, twenty-two dialects (approximately 70%) have their vowel systems similar to that one of the Shangyao dialect, as shown in Figure 6 above
- As shown in Figure 6 above, the Shangyao dialect also has a seven-vowel system. However, the distribution of those vowels in the vowel space are quite different from that of Wucun Pinghua
- Besides some phonetic differences, the most noticeable difference between the vowel systems of the Wucun dialect and the Shangyao dialect is the presence or absence of the front rounded vowel /y/.

Southern Pinghua phonology and dialectal variances – rhymes

W u c u n	a	aj	aw	ap	am	at	an	ak	an̩
		ɜj	ɜw	ɜp	ɜm	ɜt	ɜn	ɜk	ɜn̩
	i		iw	ip	im	it	in		
	u	uj				ut	un	uk	un̩
	e		ew	ep	em	et	en	ek	en̩
	o					ot	on	ok	on̩
	y					yt	yn		
	ŋ								
S h a n g y a o	a	aj	aw	ap	am	at	an	ak	an̩
	ə	əj	əw	əp	əm	ət	ən	ək	ən̩
	i		iw	ip	im	it	in	ik	in̩
	u	uj				ut	un	uk	un̩
	ɛ		ɛw			ɛt	ɛn	ɛk	ɛn̩
	ɔ		ɔj			ɔt	ɔn		
	ə	əj	əw			ət	ən		

Figure 7 rhyme inventories of the Wucun dialect and the Shangyao dialect
(Data of the Shangyao dialect are taken from de Sousa (2011))

- The Wucun dialect and the Shangyao dialect are different significantly in their rhyme inventories, as shown in Figure 7 on the left
- Besides the differences stemming from the phonotactics regarding the co-occurrences of vowels and final consonants, the most appreciable difference is whether the velar nasal /ŋ/ can occur as a rhyme on its own. While the velar nasal can stand alone as a rhyme in the Wucun dialect, it cannot function as a rhyme in the Shangyao dialect
- Most these differences can also be observed from between the other Southern Pinghua dialects, a situation that can roughly divide those dialects into two distinctive groups

Southern Pinghua phonology and dialectal variances – tones

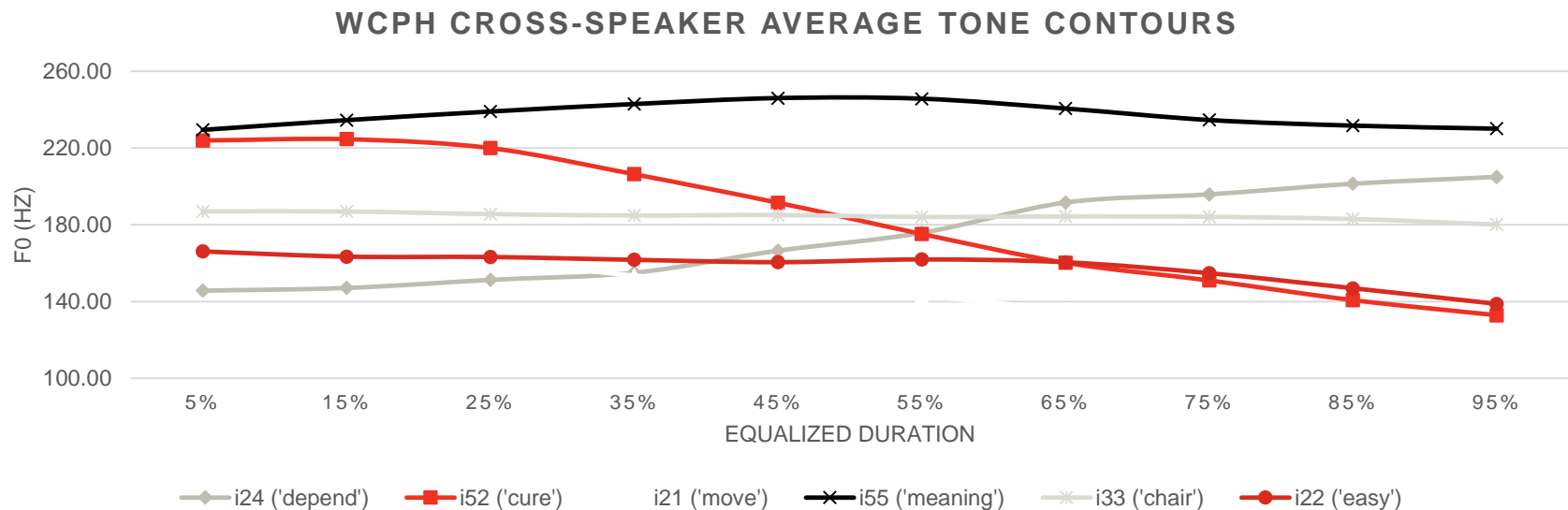


Figure 8 cross-speaker average tone contours of the Wucun Dialect

- The Wucun dialect has three level tonemes (high, mid, and low), two falling tonemes (high and low), and one rising toneme
- In comparison, the Shangyao dialect has four level tonemes (high, mid, low, and extra low), one falling toneme, and two rising tonemes (high and low) (de Sousa (2011))
- Phonetic tone contours vary considerably across Southern Pinghua dialects. Nevertheless, they can be divided roughly into two distinctive groups based on the number of rising tonemes.

Southern Pinghua phonology and dialectal variances – tone sandhi

- Tone sandhi is a phonological process in which a tone systematically changes to another due to the environment it occurs. Tone Sandhi is a common phonological phenomenon in many Sinitic languages, such as Mandarin, Wu, Min, and some dialects of Cantonese (Hou 2016; Y.Chen 2000; Duanmu 2007; Evans 2018). In these Sinitic languages, tone sandhi can operate in both isolated multisyllabic words or connected speech.
- In comparison, the tone sandhi in the Wucun dialect of Southern Pinghua is not as complex as those of many other Sinitic languages in that it primarily operates on the rising tone (transcription '24').

Southern Pinghua phonology and dialectal variances – tone sandhi

- Within a disyllabic word of the Wucun dialect, a rising tone (transcription ‘24’) can be realized as a mid-level tone (transcription ‘33’) when it precedes other tones rather than another rising tone (transcription ‘24’). When two rising tones (transcription ‘24’) are adjacent to one another, they both are realized as a sequence of two mid-level tones (transcription ‘33’). The two environments triggering sandhi tones are exemplified in Table 1 below.

Underlying tones (in transcription)	Example words: citation form	Surface tones (in transcription)	Example words: surface form	Gloss
24+21	/fu24tɕw21/	33+21	[fu33tɕw21]	‘hammer’
24+22	/fu24tso22/	33+22	[fu33tso22]	‘assist’
24+33	/yt24peŋ33/	33+33	[yt33peŋ33]	‘moon cake’
24+55	/mok24pin55/	33+55	[mok33pin55]	‘wood slice’
24+52	/lɕw24tsɕw52/	33+51	[lɕw33tsɕw52]	‘a place name’
24+24	/lak24y24/	33+33	[lak33y33]	‘rain’

Table 1 tone sandhi in the Wucun dialect of Southern Pinghua

- As for the other Southern Pinghua dialects that have been surveyed, there is no report on the presence of tone sandhi

Southern Pinghua phonology and dialectal variances – syllable structure

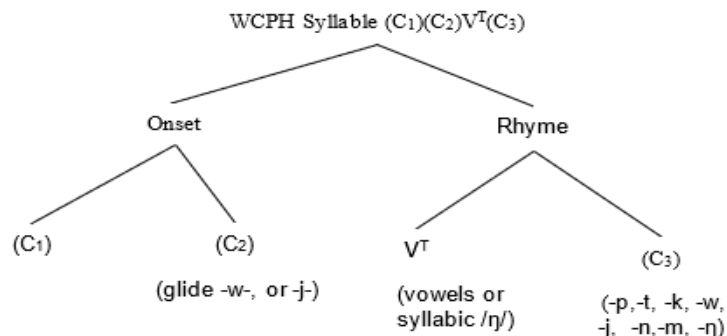


Figure 9 syllable structure of the Wucun dialect

- Figure 9 above shows the syllable structure of the Wucun dialect. As shown, the slot C1 allows all the consonants while C2 permits only the medial glide /w/ or /j/, and C3 takes oral unaspirated oral stops and nasals.
- In comparison, the syllable structure of the Shangyao dialect is $C_1V^TC_2$ (de Sousa (2015))
- Eleven Southern Pinghua dialects can be analyzed as having the same syllable structure as the Wucun dialect and twenty-one other dialect as having the same syllable structure as the Shangyao dialect. In other words, Southern Pinghua dialects can also be exclusive divided into two groups based on their syllable structures.
- The differences in the analyses of the syllable structures of the Wucun dialect and the Shangyao dialect stem from that the former permits the medial palatal glide /j/, whereas the latter not. To simplify the analysis of the syllable structure and the rhyme inventory, Southern Pinghua dialects permit no medial palatal glide /j/ are typically analyzed as having two velar stops with lip-rounding gesture (/kw/ and /k^{hw}/), which are absent from the analysis of dialects allowing medial palatal glide /j/, such as the Wucun dialect.

Conclusion

- Southern Pinghua dialects show diversity in their consonants, vowels, tones, and syllable structures.
- Although the phonological differences between Southern Pinghua dialects cannot separate them as different languages, the degree of diversity should suffice to suggest that they are not merely 'accents' to one another.
- The current study has shown that the phonological differences between Southern Pinghua dialects are distinctive and can divide those dialects into two distinctive groups. In future across-linguistic comparative studies, phonological features of both groups should be considered since no dialects from one group can reliably represent those from the other.

Conclusion

- The two-group division of Southern Pinghua dialects based on distinctive phonological features may be used as a basis to propose a new internal branching of Southern Pinghua dialects.
- However, further studies are required to investigate the historical developments of those distinctive phonological features of these two groups to explore further how they have diverged
- Investigations into non-phonological aspects of these two groups of dialects are also needed to test the hypothesis of the two-group division

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